



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/583,791	06/21/2006	Jianfei He	U 016341-8	8541
140	7590	05/13/2010	EXAMINER	
LADAS & PARRY LLP 26 WEST 61ST STREET NEW YORK, NY 10023				MANSOURY, NOURLI
ART UNIT		PAPER NUMBER		
2475				
			NOTIFICATION DATE	DELIVERY MODE
			05/13/2010	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

[nyuspatactions@ladas.com](mailto:nyuspatactions@ladas.com)

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/583,791	HE, JIANFEI	
	<b>Examiner</b>	<b>Art Unit</b>	
	NOURALI MANSOURY	2475	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 22 December 2009.  
 2a) This action is FINAL.                    2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-14 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 1-14 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on 21 June 2006 is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | Paper No(s)/Mail Date. _____ .                                    |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____. | 5) <input type="checkbox"/> Notice of Informal Patent Application |
|  | 6) <input type="checkbox"/> Other: _____ .                        |

## **DETAILED ACTION**

### ***Claim Objections***

1. Claims 1-14, are objected to under 37 C.F.R. 1.75 because of the following informalities:

In claim 1 line 15, second occurrence, "content" and seems to refer back to "traffic" recited at line 9 in claim 1, first occurrence. If it is true, it is suggested to change "traffic" to ---- the traffic ----.

In claim 1 line 19, second occurrence, "packets" and seems to refer back to "packets" recited at line 10 in claim 1, first occurrence. If it is true, it is suggested to change "packets" to ---- the packets ----. See also claim 5 lines 26, 28, 33, seem to refer back to claim 5 line 14, and claim 6 lines 11, 13, seem to refer back to claim 6 line 3.

In claim 6 line 10, second occurrence, "an encapsulation/de-capsulation module" and seems to refer back to "an encapsulation/de-capsulation module" recited at line 9 in claim 6, first occurrence. If it is true, it is suggested to change "an encapsulation/de-capsulation module" to ---- the encapsulation/de-capsulation module ----.

In claim 1 line 2, the term "TDM" not defining what "TDM" stands for. See also in claim 5 and 6.

In claim 4 line 2, the term "GFP" not defining what "GFP" stands for.

In claim 4 line 3, the term "CID" not defining what "CID" stands for.

Claims 2-3, 7-14, are objected to as being dependent upon objected base claim. Appropriate correction is required.

NOTE:

The phrase “ADAPTED TO” that is recited in claims 1, 5 does not positively claim the subsequent limitation. Therefore, the limitations after the phrase are not considered to have patentable weight. It is suggested the applicant remove this phrase.

***Drawings***

2. Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled “Replacement Sheet” in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:
- The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
4. Claims 4, 12-13, are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 4 recites the limitation "the GFP frames" in line 2. There is insufficient antecedent basis for this limitation in the claim. See also in claim 5 and 6.

Claim 12 recites the limitation "the high-priority traffic" in line 4. There is insufficient antecedent basis for this limitation in the claim.

Claim 12 recites the limitation "the low-priority traffic" in line 4. There is insufficient antecedent basis for this limitation in the claim.

Claim 13 recites the limitation "the high-priority service" in line 4. There is insufficient antecedent basis for this limitation in the claim.

Claim 13 recites the limitation "the low-priority service" in line 4. There is insufficient antecedent basis for this limitation in the claim.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-14, are rejected under 35 U.S.C. 103(a) as being unpatentable over Field et al. (US 6621828) in view of Diaz et al. (5809021).

Regarding claims 1, 5 and 6, Field et al. discloses an integrated cross-switching unit (Fig. 1 element 14) and corresponding a traffic scheduling method (col 1 lines 66-67), which is connected with a TDM line unit and a data service processing unit, wherein the integrated cross-switching unit comprises: a bus identification module (Fig. 2 element 40); a high-order cross-connecting module (Fig. 2 element 44, col 6 lines 28-30 [inherent both higher and lower order cross-connecting module]); a high-order mapping/de-mapping module (col 12 lines 35-42, col 16 lines 41-45 [inherent both

Art Unit: 2475

higher and lower order mapping/de-mapping nodule]); a high-order encapsulation/de-encapsulation module (col 6 lines 38-51, e.g., The ATM line cards 40 also perform ATM layer function such as processing operation, administration, and management (OAM) cells and perform monitoring functions. Packet based line cards 40 segment and resemble (SAR) packets into generic ATM cells. Ethernet line cards 40 examine source address (SA) and destination address (DA) of the ethernet packets in order to map the packet flow into a cell flow, that therefore inherent both higher and lower order encapsulation/de-capsulation); a high-order packet scheduling module (col 6 lines 20-31, e.g., The cell based switching switches ATM cell traffic, ATM adaption layer (AAL) cell traffic, and segmented packet traffic on a frame-based schedule, that therefore inherent both higher and lower order packer scheduling module, Fig. 18 element 356); a low-order cross-connecting module (col 6 line 20-31, e.g., the switch core 44 may also convert traffic between the TDM and ATM realms to establish cross connections between the line cards 40, that therefore inherent both higher and lower order order cross-connecting module); a low-order mapping/de-mapping module (col 12 lines 35-42, col 16 lines 41-45 [inherent higher and lower order mapping/de-mapping module]); a low-order encapsulation/de-encapsulation module (col 6 lines 38-51, e.g., The ATM line cards 40 also perform ATM layer function such as processing operation, administration, and management (OAM) cells and perform monitoring functions. Packet based line cards 40 segment and resemble (SAR) packets into generic ATM cells. Ethernet line cards 40 examine source address (SA) and destination address (DA) of the ethernet packets in order to map the packet flow into a cell flow, that therefore inherent both

Art Unit: 2475

higher and lower order encapsulation/de-capsulation); and a low-order packet scheduling module (col 6 lines 20-31, e.g., The cell based switching switches ATM cell traffic, ATM adaption layer (AAL) cell traffic, and segmented packet traffic on a frame-based schedule, that therefore inherent both higher and lower order packer scheduling module, Fig. 18 element 356); wherein the bus identification module is adapted to identify a traffic source, to transmit traffic from the TDM line unit to the high-order cross-connecting module, and to transmit packets from the data service processing unit to the high-order packet scheduling module (col 5 lines 42-67, FIG. 2 illustrates details of the integrated access device 14 includes line cards 40, a switch core 44, and a rate adjustable backplane 46); the high-order cross-connecting module is adapted to schedule the traffic as required for low-order processing to the low-order cross-connecting module, and to perform high-order scheduling on time slots of the traffic from the TDM line unit; the low-order cross-connecting module is adapted to perform low-order scheduling on time slots of the traffic from the TDM line unit; the high-order and low-order mapping/de-mapping modules are adapted to de-map the traffic from the high-order and low-order cross-connecting modules correspondingly, and to map traffic from the high-order and low-order encapsulation/de-encapsulation modules respectively (col 12 lines 35-42, col 16 lines 41-45 [inherent higher order mapping/de-mapping module]); the high-order and low-order encapsulation/de-encapsulation modules are adapted to de- encapsulate the traffic from the high-order and low-order mapping/de-mapping modules correspondingly, and to encapsulate packets from the high-order and low-order packet scheduling modules respectively (col 19 lines 53-67, FIG. 18 is a block

Art Unit: 2475

diagram illustrating details of the bus fuser of FIG. 17 (the fused TDM/ATM switch card and the high capacity ATM switch card of FIG. 3); the high-order packet scheduling module is adapted to schedule packets from the high-order encapsulation/de-encapsulation module and/or the bus identification module via the high-order encapsulation/de-encapsulation module, the high-order mapping/de-mapping unit, and the high-order cross-connecting module in turn (col 6 lines 20-31, e.g., The cell based switching switches ATM cell traffic, ATM adaption layer (AAL) cell traffic, and segmented packet traffic on a frame-based schedule, that therefore inherent both higher and lower order packer scheduling module, Fig. 18 element 356, col 32 lines 20-34); the low-order packet scheduling module is adapted to schedule packets from the low-order encapsulation/de-encapsulation module and to transmit the scheduled packets to the TDM line unit via the low-order encapsulation/de-encapsulation module, the low-order mapping/de-mapping unit, and the low-order cross-connecting module in turn (col 6 lines 20-31, e.g., The cell based switching switches ATM cell traffic, ATM adaption layer (AAL) cell traffic, and segmented packet traffic on a frame-based schedule, that therefore inherent both higher and lower order packer scheduling module, Fig. 18 element 356). Field does not explicitly disclose transmit the scheduled packets to the data service processing unit via packet bus or to the TDM line unit. However, Diaz et al. for example from similar field of endeavor discloses transmit the scheduled packets to the data service processing unit via packet bus (col 24 lines 38-49, e.g., Data from a T1/E1 interface is placed onto the ingress bus in a VT format. Each interface is provided with an egress STS-1/TU-3 pointer processor and a VT mapper/demapper which

Art Unit: 2475

performs the translation between T1/E1 and VT1.5/VT2 respectively). Thus it would have been obvious to the person of ordinary skill in the art at the time of the invention to include transmit the scheduled packets to the data service processing unit via packet bus as taught by Diaz et al. in the system of Field et al., wherein the method can be implemented accordingly. The motivation for including transmit the scheduled packets to the data service processing unit via packet bus as taught by diaz et al. is to provide flexible support various form of telecommunications information services.

Regarding claim 2, Field et al. discloses wherein a plurality of physical channels are configured between the mapping/de-mapping module and the encapsulation/de-encapsulation module, and between the encapsulation/de-encapsulation module and the packet scheduling module (col 12 lines 35-42, FIG. 7 is a block diagram illustrating transport of asynchronous transfer mode (ATM) traffic in the TSB frame).

Regarding claim 3, Field et al. discloses wherein the plurality of physical channels are configured with different encapsulation protocols respectively (col 16 lines 32-51).

Regarding claim 4, Field et al. discloses wherein for the GFP frames from different physical channels, the encapsulation/de-encapsulation module finds CID field in the extended header of each GFP frame and directly forwards the data GFP frame with the CID field into the corresponding physical channel (col 15 lines 43-55).

Regarding claim 7, Field et al. discloses wherein the identifying traffic source comprises: reporting a slot number corresponding to the data service processing unit and unit type of the data service processing unit to a control unit via the data service processing unit (col 30 lines 57-67). Field et al. does not explicitly disclose identifying the type of a bus connected with the data service processing unit as a packet bus. However, Diaz et al. for example from similar field of endeavor discloses identifying the type of a bus connected with the data service processing unit as a packet bus (col 24 lines 35-49). Thus it would have been obvious to the person of ordinary skill in the art at the time of the invention to include identifying the type of a bus connected with the data service processing unit as a packet bus as taught by Diaz et al. in the system of Field et al., wherein the method can be implemented accordingly. The motivation for including identifying the type of a bus connected with the data service processing unit as a packet bus as taught by Diaz et al. is to provide flexible support various form of telecommunications information services.

Regarding claim 8, Field et al. discloses the TDM line unit and the data service processing unit copying the traffic to a first integrated cross-switching unit and a second integrated cross-switching unit which have the same function and structure to implement the same scheduling (col 6 lines 62-67, col 7 lines 1-14); if the first integrated cross-switching unit and the second integrated cross-switching unit are both normal, the TDM line unit and the data service processing unit receiving the traffic from the first integrated cross-switching unit and the second integrated cross-switching unit, and

Art Unit: 2475

selecting either of the traffic to implement a processing (col 6 lines 62-67, col 7 lines 1-14); if either of the first integrated cross-switching unit and the second integrated cross-switching unit goes wrong, the faulted integrated cross-switching unit reporting to the control unit, and the control unit instructing the TDM line unit and the data service processing unit to select the traffic of the normal integrated cross-switching unit (col 10 lines 1-6, col 6 lines 62-67, col 7 lines 1-10).

Regarding claim 9, Field et al. discloses the TDM line unit and the data service processing unit copying the traffic to a first integrated cross-switching unit and a second integrated cross-switching unit which have the same function and structure to implement the same scheduling (col 6 lines 62-67, col 7 lines 1-14); the TDM line unit and the data service processing unit receiving the traffic from the first integrated cross-switching unit and the second integrated cross-switching unit, determining whether the two traffic is normal, and selecting either of the traffic to implement a processing if the two traffic is both normal; if either of the traffic is abnormal, selecting the normal traffic (col 15 lines 28-36, col 10 lines 1-6).

Regarding claim 10, Field et al. discloses the TDM line unit and the data service processing unit allocating the traffic to a first integrated cross-switching unit and a second integrated cross-switching unit which have the same function and structure to implement scheduling (col 6 lines 62-67, col 7 lines 1-14) ; if the first integrated cross-switching unit and the second integrated cross-switching unit are both normal, the TDM

Art Unit: 2475

line unit and the data service processing unit receiving the traffic from the first integrated cross-switching unit and the second integrated cross-switching unit to implement a processing; if either of the first integrated cross-switching unit and the second integrated cross-switching unit goes wrong, the faulted integrated cross-switching unit reporting to a control unit, and the control unit instructing the TDM line unit and the data service processing unit to switch the traffic allocated to the faulted integrated cross-switching unit to the normal integrated cross-switching unit (col 10 lines 1-6).

Regarding claim 11, Field et al. discloses the TDM line unit and the data service processing unit allocating the traffic to a first integrated cross-switching unit and a second integrated cross-switching unit which have the same function and structure to implement scheduling (col 6 lines 62-67, col 7 lines 1-14); the TDM line unit and the data service processing unit receiving the traffic from the first integrated cross-switching unit and the second integrated cross-switching unit and determining whether the traffic is normal (col 10 lines 1-6); if either of the traffic is abnormal, switch the traffic of the integrated cross-switching unit corresponding to the abnormal traffic to the normal integrated cross-switching unit (col 15 lines 28-36).

Regarding claim 12, Field et al. discloses wherein the traffic allocated to the first integrated cross-switching unit and the second integrated cross-switching unit has priorities; when either of the integrated cross-switching units goes wrong and needs traffic switching, the high-priority traffic substitutes the low-priority traffic under

Art Unit: 2475

processing (col 14 lines 3-8, FIG. 10 is a block diagram illustrating details of the control channel header and trailer for each slot of the HSA frame).

Regarding claim 13, Field et al. discloses wherein the service allocated to the first integrated cross-switching unit and the second integrated cross-switching unit has priority; when either of the integrated cross-switching units goes wrong and needs service switching, the high-priority service can substitute the low-priority service under processing (col 14 lines 3-8, FIG. 10 is a block diagram illustrating details of the control channel header and trailer for each slot of the HSA frame).

Regarding claim 14, Field et al. discloses wherein the TDM line unit is a synchronous digital hierarchy or synchronous optical network line unit (col 5 lines 58-65).

### ***Conclusion***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Kumar et al. (US 2002/0075854), formation of networks using different types of links, links with differing bandwidth, data rates, and bit error rates, as well as both asymmetric and symmetric links.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to NOURALI MANSOURY whose telephone number is

Art Unit: 2475

(571)270-5671. The examiner can normally be reached on Monday-Thursday, 12:00-4:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dang Ton can be reached on 571-272-3171. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

NOURALI MANSOURY  
Examiner  
Art Unit 2475

/DANG T TON/  
Supervisory Patent Examiner, Art Unit 2475/D. T. T./  
Supervisory Patent Examiner, Art Unit 2475